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NEW STATISTICAL SERIES: EMPLOYMENT, AVERAGE WEEKLY EARNINGS, JOB VACANCIES AND OVERTIME

INQUIRIES

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INTRODUCTION

This paper describes the conceptual and methodological changes associated with the introduction of a new statistical series on employed wage and salary earners, and the redevelopment of existing statistical series on average weekly earnings, job vacancies and overtime using a common statistical framework, statistical unit, industry classification and, where appropriate, common data concepts and definitions.

BACKGROUND

For many years, estimates of civilian employees, average weekly earnings, distribution and composition of employee earnings and hours, job vacancies and overtime were based on a statistical framework constructed from lists of employers subject to payroll tax, supplemented by lists of government employers, religious and benevolent institutions and other non-profit organisations. Data on civilian employees and average weekly earnings were based on information obtained from payroll tax returns, whereas data on distribution and composition of employee earnings and hours, job vacancies and overtime were derived from direct collections of information from a sample of employers selected from the framework.

In 1981, an ABS review of this methodology concluded that the civilian employees series had substantially underestimated the rate of growth in employment because a significant number of small businesses were exempt from payroll tax. This deficiency in coverage of small businesses also adversely affected the quality of data on average weekly earnings because small businesses were under-represented in estimates based on the payroll tax framework.

In the light of the review undertaken and discussions held with a number of Commonwealth and State Departments which were users of the statistics, the conclusion was reached that the administrative source could no longer serve as a satisfactory basis for statistics. It was decided that information required for employment, average weekly earnings, job vacancies and overtime would need to be obtained directly from employers using sample surveys based on the ABS register of businesses and organisations; but before this could be done, the coverage of small businesses in the ABS register would need to be improved.

INTERIM ARRANGEMENTS

As it was expected to take some years to improve the coverage of the ABS register and develop a new statistical system based on it, the following interim arrangements were implemented:

1 *Civilian Employees Series*

For the private sector, the existing system based on processing of payroll tax records was abandoned. The existing system for the government sector was maintained and details of government employment continued to be published in *The Labour Force, Australia* (6203.0) monthly until June 1983.

2 *Gross Wages and Salaries for National Accounts*

With the abandonment of payroll tax records as a source of statistics for the private sector, alternative arrangements were needed to meet the needs of the National Accounts for data on gross wages and salaries paid each quarter. As an interim measure, pending the development of a large survey of employment and earnings, a small survey of employers in the private sector based on the existing ABS register of businesses was introduced in September 1981. Data from the interim survey was used in estimating quarterly wages, salaries and supplements.

3 *Average Weekly Earnings*

Average Weekly Earnings had been calculated using data from the payroll tax system and a range of other sources. Following the decision to stop using payroll tax data, an interim quarterly survey of employers (private and government) based on the existing ABS register of businesses was introduced in September 1981 to collect data on average earnings.

4 *Employee Earnings and Hours—Distribution and Composition*

An annual survey had been conducted in May each year, of approximately 7,000 employers, using the payroll tax system as a framework to collect data on the distribution and composition of employee earnings and hours. In order to make resources available for development of the new employer survey system, and to reduce the reporting burden on employers, the survey was not conducted in 1982. It was decided that in future the survey would be conducted every second year beginning in 1983, using the ABS register as the statistical framework.

5 *Job Vacancies and Overtime*

The sample of employers for this quarterly survey was selected from the payroll tax framework, with the last sample selection made from a framework created in mid-1980. It was decided that this survey would continue on the old framework without revision to the sample in the interim period, until a new sample was introduced based on the upgraded ABS register of businesses.

CURRENT POSITION

- The ABS register of businesses has been substantially upgraded, particularly in the coverage of small businesses.
- A common statistical unit, the enterprise/State unit, has been adopted for all of the employer based surveys. This unit, which comprises the activities of all of the locations of a legal entity operating within a State, was determined to be the best means of meeting needs for statistical series at the national level and for each of the States and Territories.
- All data from the new statistical system are classified according to the 1978 edition of the *Australian Standard Industrial Classification* (1201.0).
- Extensive field testing of a variety of reporting and collection methods has been undertaken in order to minimise the reporting burdens of employers and to ensure the collection of high quality data.
- A new computer processing system has been developed to assist in the selection of samples from the ABS register of businesses, the despatch of forms, and subsequent editing of data and tabulation of results.

The following new or redeveloped surveys based on the upgraded register of businesses have been introduced:

- 1 Survey of Employee Earnings and Hours (biennial)—from May 1983
- 2 Survey of Employment and Earnings (quarterly)—from September quarter 1983
- 3 Survey of Average Weekly Earnings (quarterly)—from September quarter 1983
- 4 Surveys of Job Vacancies and Overtime (quarterly)—from December quarter 1983

To provide a statistical link between the old and new series, the interim surveys have been conducted in parallel with the new Surveys of Employment and Earnings and Average Weekly Earnings for the September and December quarters 1983. For Job Vacancies and Overtime, a statistical link between the old and new series will be provided by data obtained on the old payroll tax based sample and the new ABS register based sample for the December quarter 1983. Government employment using the new direct collection procedures was first obtained for the June quarter 1983 to provide a statistical link with the old series which was terminated after the June quarter 1983.

COMPARABILITY BETWEEN OLD AND NEW SERIES

1 *Survey of Employee Earnings and Hours*

For the May 1983 survey, data are not strictly comparable with those of earlier surveys because of the greatly improved coverage of businesses, particularly small businesses, provided by the ABS register and changes to the definitions of Adults/Juniors and Full-time/Part-time employees.

In the 1983 survey, adults are defined as employees 21 years of age or over and those employees who, though under 21 years of age, are paid at the full adult rate for their occupation. In the 1981 and previous surveys, adults were defined as employees aged 21 years and over.

Full-time employees are defined in the 1983 survey as those employees who normally work the agreed or award hours for a full-time employee in their occupation. If agreed or award hours do not apply, employees are regarded as full-time if they ordinarily work 35 hours or more a week.

This definition of full-time/part-time is now a standardised definition for all surveys and corresponds to that used in the ABS Monthly Labour Force Survey.

2 Quarterly Survey of Employment and Earnings

A Comparability with the old Civilian Employees series

The old Civilian Employees series provided an estimate of the number of wage and salary earners in civilian employment, adjusted to exclude the effect of multiple job holding in both the government and private sectors. In the Survey of Employment and Earnings, the series provides a measure of occupied *jobs*, with no adjustment for multiple job holding.

Other major differences between the old series based on payroll tax data and the new series based on a quarterly collection from employers are outlined below.

OLD SERIES—BASED ON PAYROLL TAX DATA

Scope and data sources

Estimates of civilian wage and salary earners in industries other than agriculture and private domestic service were obtained from ABS processing of State and Territory payroll tax records, and returns from government and other bodies. Because of limits below which payroll tax was not levied, no direct information was available from the large number of smaller businesses which were exempt from payroll tax. Estimates of employees in this 'unrecorded sector' were made by the ABS by using data from the Population Census and Labour Force Survey. The resultant series attempted to enumerate the number of persons who were wage and salary earners.

Reference period and timeliness

Estimates were published monthly. The reference period was the concluding date of the last pay-period of each month. Preliminary estimates were generally available within eight weeks of this reference period.

The series were subject to some lag in reflecting changes in employment because some payroll taxpayers were permitted to submit periodic (i.e. 3, 6 or 12 monthly) returns, and an appreciable number of other taxpayers submitted monthly returns well after they were due. The extent of such lags varied from time to time as a consequence of administrative action or external factors, such as postal hold-ups preventing the filing of returns.

Data items

Payroll tax returns provided data on total wages and salaries subject to payroll tax, and the number of male and female employees.

Seasonally adjusted data

A seasonally adjusted series was published at the Australian level.

NEW SERIES—BASED ON QUARTERLY COLLECTION FROM EMPLOYERS

Data are obtained directly from *all* government departments and authorities and a large sample of private employers. All wage and salary earners who received pay for the reference period are represented in the survey *except*: members of the permanent defence forces; employees of enterprises in the private sector primarily engaged in agriculture, forestry, fishing and hunting; employees in private households employing staff; all employees of overseas embassies, consulates, etc; and employees based outside Australia.

Estimates will be published quarterly. For number of employees, the reference period is a specified pay-period at or about the middle of each month of the quarter. For earnings the reference period is all pay-periods ending in the three months of each calendar quarter. The longer term aim is for preliminary estimates to be published within eight weeks of the end of the quarter.

Apart from the effects of external factors such as postal delays, the new collection should not be subject to the kind of lags which affected the former Civilian Employees series.

The collection provides data on gross wages and salaries paid each quarter, including severance and termination pay, and the number of employees in each month.

For the middle month of each quarter, additional detail will be collected on the number of full-time and part-time male and female employees.

Seasonally adjusted data cannot be produced until data for a sufficient number of quarters become available.

Revisions

The civilian employees series were subject to extensive revision, often dating back a number of years, because of benchmark revisions based on each successive population census.

Estimates will be subject to revision but it is hoped that, as the collection becomes better established, revisions will become small.

Sample and non-sample errors

The civilian employees series was a complete collection of payroll tax contributors and government organisations. There was therefore no sample error associated with the collection.

Employment in government departments and authorities is again a complete collection but the private sector collection will be subject to sample error.

Because of the large 'unrecorded' sector, non-sampling errors were high.

With concepts, definitions and classification under direct control, non-sampling error should be small.

In conclusion therefore, the new series for Employed Wage and Salary Earners will be superior in many ways to the former Civilian Employees series.

- A more accurate measure of change in employment level over time will be provided by the new series, particularly at industry and State level because the ABS register, on which the new survey is based, does not suffer from the serious and increasing coverage deficiencies of the old payroll tax based series. The frequent and extensive revisions often dating back over a number of years which were an unstable feature of the old series are unlikely to occur.
- Higher quality industry data will be available because of the adoption of a common statistical unit, the standardising of data items and definitions for private sector and government agencies and the classification of these units to the 1978 edition of the *Australian Standard Industrial Classification* (1201.0).
- Improvement in the coverage and classification of government organisations, the availability of details on government employees by industry and the integration of data collection with that for the sample of employers in the private sector.
- The quarterly availability of details on full-time and part-time male and female employees.

B Government Employees: Comparability with the 'Old' Series

Government employees comprise not only administrative employees but also all other employees of Commonwealth, State, local and semi-government bodies engaged in services such as railways, road transport, banks, postal and telecommunications, air transport, education, radio, television, police, public works, factories, marketing authorities, hospitals and welfare institutions.

Prior to July 1983 the number of government employees was derived from a variety of administrative sources. Commonwealth Government departments and authorities generally reported the number of employees on the payroll on the last working day of the month but for State and local government employees, data were usually provided for the last day of the last pay-period ending in the month. In an attempt to provide unduplicated estimates of the number of persons who were wage and salary earners, certain government returns were adjusted to exclude some part-time employees considered to have full-time jobs elsewhere.

Government employment figures for July 1983 and subsequent months are based on data obtained from all government departments and authorities, using the same questionnaire, definitions, reference period, collection and processing procedures as for the sample of private employers. Data on total employees are collected each month and for the middle month of each quarter additional detail is collected for full-time and part-time male and female employees.

Because of the changes to collection arrangements, reference period and the treatment of part-time employees, some differences will occur between the new and old series. To provide a statistical link between the new and old series, information on the new and old basis will be published relating to April, May and June 1983.

C Comparability with the Monthly Labour Force Survey Series

The data produced from the Survey of Employment and Earnings (SEE) and the Monthly Labour Force Survey (MLFS) supplement each other in providing information which the other cannot provide. Demographic and occupation data is available from MLFS, whereas SEE provides more detailed industry data for Australia and for States.

In comparing results from SEE with those from MLFS, it must be emphasised that different estimates of employed wage and salary earners will be produced by the two surveys as a result of the use of different collection methodologies, sample design, scope, coverage and definitions.

Because the ABS register of businesses, like all registers, is never completely up to date, the estimates derived from the framework will tend to be affected by lags in register updating. The Monthly Labour Force Survey, on the other hand, uses short term projections of the population in its estimation system and estimates reflect any inaccuracies in these projections.

For the States and Territories with smaller populations, absolute sample numbers of both SEE and MLFS are relatively small, estimates are less reliable and relative standard errors must be taken into account when comparing the two series.

The methodology, procedures and reporting practices associated with the new survey will be closely monitored over the next twelve months and estimates for the first few quarters may be subject to more revision than is hoped for in the longer run.

The principal conceptual difference between the two series arises from the MLFS measuring the *labour force status of individuals*, whereas in SEE, data are obtained on *jobs* occupied by wage and salary earners. This means that employees who appear on more than one payroll are counted separately for each appearance. Such persons are counted only once in the Labour Force Survey.

Other major differences between the two surveys are outlined below:

MONTHLY LABOUR FORCE SURVEY— EMPLOYED WAGE AND SALARY EARNERS

Scope

Excluded only from the scope of the Labour Force Survey Series are: certain diplomatic personnel and overseas residents in Australia.

Survey design and collection methodology

The survey is based on a multi-stage area sample of private dwellings (about 33,000 houses, flats, etc.) and non-private dwellings (hotels, motels, etc.) and covers about two-thirds of one per cent of the population.

Information is obtained from the occupants of selected dwellings by personal interview.

Reference Period

Interviews are generally conducted during two weeks beginning on the Monday between the 6th and 12th of each month. The reference period relates to the week before the interview.

Definitions

Employees include those aged 15 and over *who worked* for one hour or more in the reference period, for pay, commission or payment in kind.

Employees who had a job but were on leave without pay for less than four weeks up to the end of the reference period are *included*.

SURVEY OF EMPLOYMENT AND EARNINGS— EMPLOYED WAGE AND SALARY EARNERS

Excluded only from the Employer Survey series are: employees of enterprises in the private sector primarily engaged in agriculture, forestry, fishing and hunting; employees in private households employing staff; all employees of foreign embassies and consulates.

The survey is based on a direct collection from all government departments and authorities and a sample of approximately 20,000 private employers selected from the ABS register of businesses.

Information is obtained from employers by means of a mail out/mail back questionnaire.

A specified pay period at or about the middle of each month (e.g. for the September quarter 1983, specified pay periods were those ending on or before 22 July, 19 August and 16 September).

Employees include only those persons *who receive pay* for any part of the reference period. Persons working very few hours and not paid through a formal payroll system may not be reported by employers.

Employees on leave without pay for the whole of the reference period are *excluded*.

Employees stood down without pay, because of bad weather or plant breakdown at their place of employment, for less than four weeks up to the end of the reference period are *included*.

Employees on strike or locked out are *included*.

Employees on workers' compensation and expecting to return to their job are *included*.

Employees stood down without pay (for any reason) for the whole of the reference period are *excluded*.

Employees on strike or locked out without pay for the whole of the reference period are *excluded*.

Employees on workers' compensation are *excluded* unless they continue to be paid through the payroll.

3 Survey of Average Weekly Earnings

Major differences between the Average Weekly Earnings series based on a quarterly survey of employers and the old series based on payroll tax data occurred when the interim survey was introduced in September 1981. These differences were described in an ABS Information Paper *Average Weekly Earnings: New Series to Replace Former Payroll Tax Based Series* (6336.0) published on 24 March 1982.

For the interim survey, a sample was first selected from a framework obtained from the ABS register of businesses in mid-1981 and no revisions had been planned to be made to the sample to take account of new businesses or those which ceased operations during the life of the interim survey. However, because of the potential distortions introduced by the heavier than expected rate of wastage, the sample was revised in December 1982 to account for businesses which ceased operations.

For the new survey of Average Weekly Earnings, the sample has been reselected from a framework obtained from the upgraded ABS register of businesses. Facilities have been developed to allow the sample to be revised each quarter to reflect changes in the register. Definitions of adults/juniors and full-time and part-time employees have been standardised with those used in the (biennial) Survey of Employee Earnings and Hours and the Survey of Employment and Earnings (as appropriate).

Differences in estimates of Average Weekly Earnings from the new and the interim survey will occur because of the introduction of a new and larger sample, based on the more up-to-date and upgraded register of businesses.

4 Surveys of Job Vacancies and Overtime

A slight modification has been introduced into the new Survey of Overtime with the collection of overtime hours 'paid for' rather than overtime hours 'worked'.

The combined return for the new Survey of Job Vacancies and Overtime collects details on the total number of employees who receive pay for any part of the pay-period. Previously the data collected related to the number of employees on the payroll on the *last* day of the pay-period ending on or before the survey reference date.

PUBLICATION PROGRAM

Publication of the new series will be as follows:

Employed Wage and Salary Earners (6247.0 and 6248.0)

Results for the September quarter 1983 will be published in June 1984.

Average Weekly Earnings (6301.0 and 6302.0)

The old and new series were processed concurrently for the September and December quarters 1983. Results will be published in June 1984, including revised series for the period September 1981 to December 1983.

Job Vacancies (6231.0)

New series was introduced for the December quarter 1983 with the old and new series conducted concurrently for that quarter.

Overtime (6330.0)

Results will be published in June 1984.

Earnings and Hours of Employees, Distribution and Composition (6306.0)

Results of the May 1983 Survey will be published in August 1984.

Related Information Papers:

Review of ABS Employment Statistics (6239.0) published July 1981.

Average Weekly Earnings: New Series to Replace the Former Payroll Tax Based Series (6336.0) published March 1982.

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